

FIGURE 1

| | | |
|------|--|------|
| 1 | ATGTCAGTGGGAGCCATGAAGAGGAGTGGGGAGGGCAGTTGGGGCTTGAGGGCGGAGC | 60 |
| 61 | GGCTGCCAGGCTACGGAGGAAGACCCCTTCCCGACTGCGGGGCTTGCGCTCCGGGACAA | 120 |
| 121 | GGTGGCAGCGCTGGAGGCTGCCCGAGCCTGCGTGGTGGAGGGGAGCTCAGCTCGGTG | 180 |
| 181 | TGGGAGCAGGCGACCGGCACTGGCTGGATGGACCTGGAAGCCTCGCTGCTGCCACTGGT | 240 |
| 241 | CCCAATGCCAGCAACACCTCTGATGGCCCCGATAACCTCACTTCAGCAGGATCACCTCCT | 300 |
| 301 | CGACGGGAGCATCTCCTACATCAACATCATATGCCCTTCGGTGTTCGGCACCATCTGC | 360 |
| 361 | CTCCTGGGCATCATCGGGAACCTCCACGGTCATCTTCGCGGTCTGTAAGAAGTCCAAGCTG | 420 |
| 421 | CACCTGGTGCACAACAGTCCCCGACATCTTCATCATCAACCTCTCGGTAGTAGATCTCCTC | 480 |
| 481 | TTTCTCCTGGGCATGCCCTTCATGATCCACCAGCTCATGGGCAATGGGTGTGGCACTTT | 540 |
| 541 | GGGAGAGCCATGTGCACCCCTCATCACGGCCATGGATGCCAAATAGTCAGTTTACCCAGCAC | 600 |
| 601 | TACATCCTGACCGCCATGGCCATTGACCGCTACCTGGCCACTGTCCACCCCATCTCTTCC | 660 |
| 661 | ACGAAGTCCGGAAGCCCTCTGTGGCCACCCCTGGTGATCTGCCCTCCTGTGGGCCCTCTCC | 720 |
| 721 | TTCATCAGCATCACCCCTGTGTGGCTGATGCCAGACTCATCCCCCTTCCCAGGAGGTGCA | 780 |
| 781 | GTGGCTGCGGCATACGCCCTGCCCAACCCAGACACTGACCTCTACTGGTTCACCCCTGTAC | 840 |
| 841 | CAGTTTTCCTGGCCCTTTGCCCTGCCCTTTTGTGGTCATCACAGCCGCATACGTGAGGATC | 900 |
| 901 | CTGCAGCGCATGACGTCCCTCAGTGGCCCCCGCCTCCCAGCGCAGCATCCGGCTGCGGACA | 960 |
| 961 | AAGAGGGTGACCCGCACAGCCATCGCCATCTGTCTGGTCTTCTTTGTGTGTGGCACCC | 1020 |
| 1021 | TACTATGTGTACAGCTGACCCAGTTGTCCATCAGCCGCCCGACCCCTCACCTTTGTCTAC | 1080 |
| 1081 | TTATACAATGCGGCCATCAGCTTGGGCTATGCCAACAGCTGCCCTCAACCCCTTTGTGTAC | 1140 |
| 1141 | ATCGTGCTCTGTGAGACGTTCCGCAACGCTTGGTCTGTGCGGTGAAGCCTGCAGCCCCAG | 1200 |
| 1201 | GGCAGCTTCGCGCTGTCAGCAACGCTCAGACGGCTGACGAGGAGGAGGACAGAAAGCAA | 1260 |
| 1261 | GGCACCTGA | 1269 |

FIGURE 2

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | S | V | G | A | T | R | G | T | S | I | G | N | V | P | F | L | A | S | V | L | P | P | R | F | A | S | L | R | A | T | R | Q | L | A | C | E | A | V |
| 21 | G | C | Q | R | A | S | N | S | I | G | I | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | |
| 41 | G | G | R | A | S | N | S | I | G | I | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | |
| 61 | W | E | Q | R | A | S | N | S | I | G | I | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | | | |
| 81 | P | R | T | G | S | I | G | N | V | P | F | L | A | S | V | L | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | |
| 101 | R | L | G | C | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | | | |
| 121 | L | H | W | L | G | C | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | |
| 141 | H | F | L | L | G | C | N | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | |
| 161 | F | G | E | T | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | | | | |
| 181 | G | E | T | M | C | T | M | A | K | T | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | | | | | |
| 201 | Y | I | L | F | S | I | G | N | V | P | F | L | A | S | V | L | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | |
| 221 | - | T | F | I | S | I | G | N | V | P | F | L | A | S | V | L | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | |
| 241 | F | I | S | I | G | N | V | P | F | L | A | S | V | L | P | P | I | R | F | S | S | A | T | R | T | L | I | S | F | S | N | A | | | | | | | |
| 261 | V | G | C | F | L | M | T | R | Q | L | A | C | E | A | V | | | | | | | | | | | | | | | | | | | | | | | | |
| 281 | Q | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | |
| 301 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 321 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 341 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 361 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 381 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 401 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |
| 421 | L | K | R | Y | Y | N | L | R | A | V | G | T | L | I | S | F | S | N | A | | | | | | | | | | | | | | | | | | | | |

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |
|---|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
| 1 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 100 |

| | | |
|-----|--|-----|
| 1 | M S V G A M K K G V G R A V G L G G G S | 20 |
| 21 | G C Q A T E E D P L P D C G A C A P G Q | 40 |
| 41 | G G R R W R L P Q P A W V E G S S A R L | 60 |
| 61 | W E Q A T G T G W M D L E A S L L P T G | 80 |
| 81 | P N A S N T S D G P D N L T S A G S P P | 100 |
| 101 | R T G S I S Y I N <u>I I M P S V F G T I C</u> | 120 |
| | I | |
| 121 | <u>L L G I I G N S T V I F A V V K K S K L</u> | 140 |
| | II | |
| 141 | H W C N N V P D <u>I F I I N L S V V D L L</u> | 160 |
| 161 | <u>F L L G M P F M I H Q L M G N G V W H F</u> | 180 |
| 181 | G E T M C T L I T A M D <u>A N S O F T S T</u> | 200 |
| | III | |
| 201 | <u>Y I L T A M A I D R Y L A T V H P I S S</u> | 220 |
| 221 | T K F R K P S <u>V A T L V I C L L W A L S</u> | 240 |
| | IV | |
| 241 | <u>F I S I T P V W L Y A R L I P F P G G A</u> | 260 |
| 261 | <u>V G C G I R L P N P D T D L Y W F T L Y</u> | 280 |
| | V | |
| 281 | <u>O E F L A F A L P F V V I T A A Y V R I</u> | 300 |
| 301 | L Q R M T S S V A P A S Q R S I R L R T | 320 |
| | VI | |
| 321 | K R <u>V T R T A I A I C L V F F V C W A P</u> | 340 |
| 341 | <u>Y Y V L O L T O L S I S R P T L T F V Y</u> | 360 |
| | VII | |
| 361 | <u>L Y N A A I S L G Y A N S C L N P F V Y</u> | 380 |
| 381 | <u>I V L C E T F R K R L V L S V K P A A Q</u> | 400 |
| 401 | G Q L R A V S N A Q T A D E E R T E S K | 420 |
| 421 | G T | 422 |

FIGURE 4

| | | |
|------|--|------|
| 1 | GCAGGCGACCTGCACCGGCTGCATGGATCTGCAAACCTCGTTGCTGTCCACTGGGCCCCAA | 60 |
| 61 | TGCCAGCAACATCTCCGATGGCCAGGATAATCTCACATTGCCGGGTCACCTCCTCGCAC | 120 |
| 121 | AGGGAGTGCTCCTACATCAACATCATATGCCCTTCCGTGTTGGTACCATCTGTCTCCT | 180 |
| 181 | GGGCATCGTGGGAAACTCCACGGTCATCTTTGCTGTGGAAGTCCAAAGCTACACTG | 240 |
| 241 | GTGAGCAACGTCCCCGACATCTTCATCATCAACCTCTCTGTGGGATCTGCTCTTCCT | 300 |
| 301 | GCTGGGCATGCCCTTTCATGATCCACCAAGCTCATGGGAACGGCTCTGGCACTTTGGGA | 360 |
| 361 | AACCATGTGCACCCCTCATCACAGCCATGGACGCCAACAGTCAGTTCACTAGCACCTACAT | 420 |
| 421 | CCTGACTGCCATGACCATTGACCGCTACTTGGCCACCGTCCACCCCATCTCCTCCACCAA | 480 |
| 481 | GTTCCGGAAGCCCTCCATGGCCACCCCTGGTGATCTGCCCTCCTGTGGCGCTCTCCTTCAT | 540 |
| 541 | CAGTATCACCCCTGTGTGGCTCTACGCCAGGCTCATTCCTTCCCAGGGGTGCTGTGGG | 600 |
| 601 | CTGTGGCATCCGCCCTGCCAAACCCGGACACTGACCTCTACTGGTTCACCTCTGTACCAGTT | 660 |
| 661 | TTTCCTGGCCCTTGCCCTTCCGTTTGTGGTCATTACCGCCGCATACGTGAAAATACTACA | 720 |
| 721 | GCGCATGACGTCTTCGGTGGCCCCAGCCTCCCAACGACGATCCGGCTTCGGACAAAGAG | 780 |
| 781 | GGTGACCCGCACGGCCATTGCCATCTGTCTGGTCTTCTTGTGTGCTGGCACCCCTACTA | 840 |
| 841 | TGTGCTGCAGCTGACCCAGCTGTCCATCAGCCGCCGACCCCTCACGTTTGTCTACTTGT | 900 |
| 901 | CAACGGGCCATCAGCTTGGGCTATGCTAACAGCTGCCCTGAACCCCTTTGTGTACATAGT | 960 |
| 961 | GCTCTGTGAGACCTTTCGAAACCGCTTGGTGTGTGTCAGTGAAGCCTGCAGCCCAGGGCA | 1020 |
| 1021 | GCTCCGCACGGTCAGCAACGCTCAGACAGCTGATGAGGAGAGGACAGAAAGCAAGGCAC | 1080 |
| 1081 | CTGACAATTCCCCAGTCGCCCTCCAAAGTCAGGCCACCCCATCAAAACCGTGGGGAGAGTAC | 1140 |
| 1141 | TGAGATTAAACCCCAAGGCTACCCCTGGGAGAATGCAGAGGCTGGAGGCTGGGGGCTTGTA | 1200 |
| 1201 | CAACCACATTCAC | 1214 |

FIGURE 5

[illegible]

FIGURE 6

IP release in MCH1- and
mock-transfected Cos-7 cells

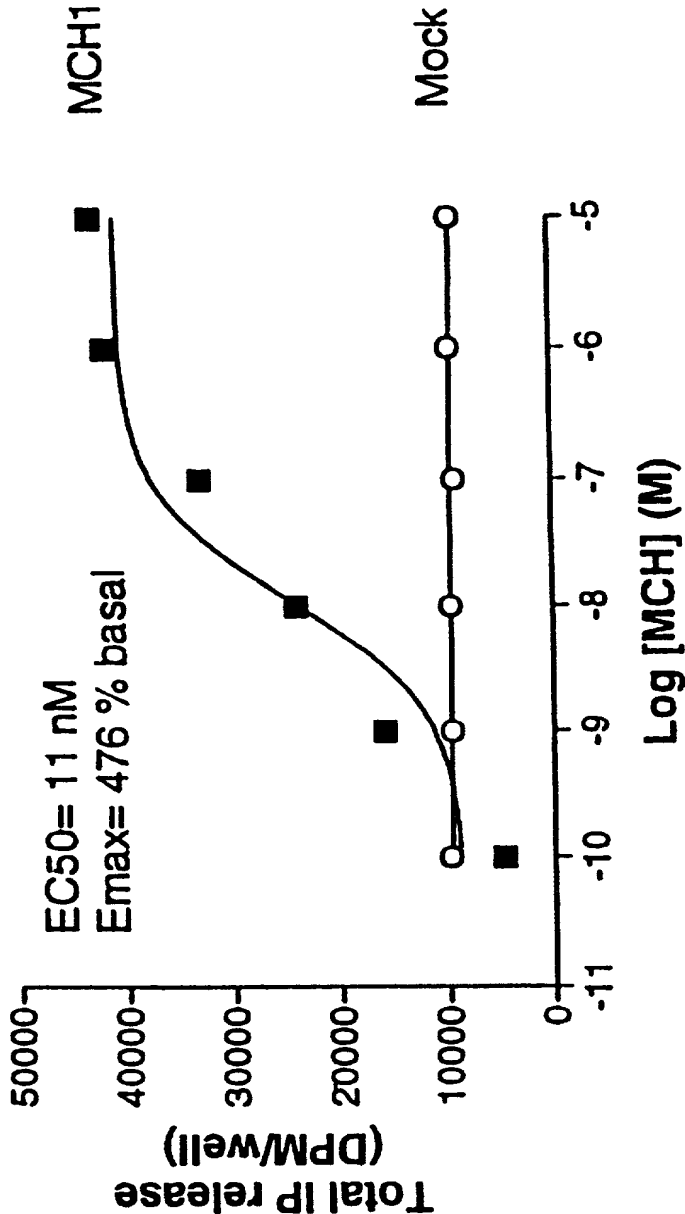


FIGURE 7A

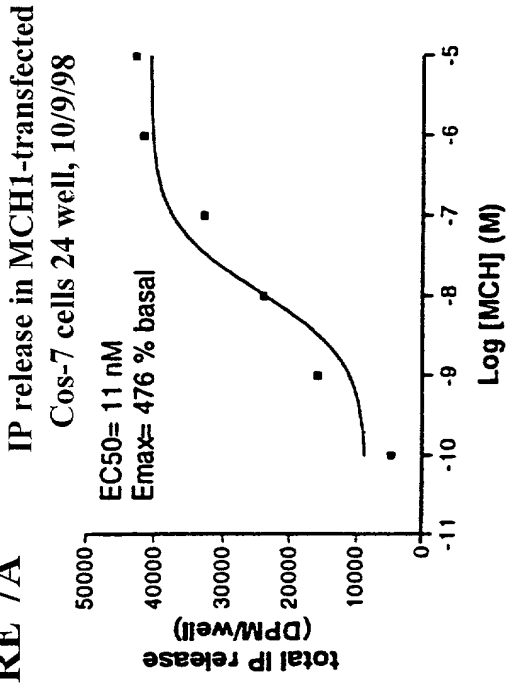


FIGURE 7B

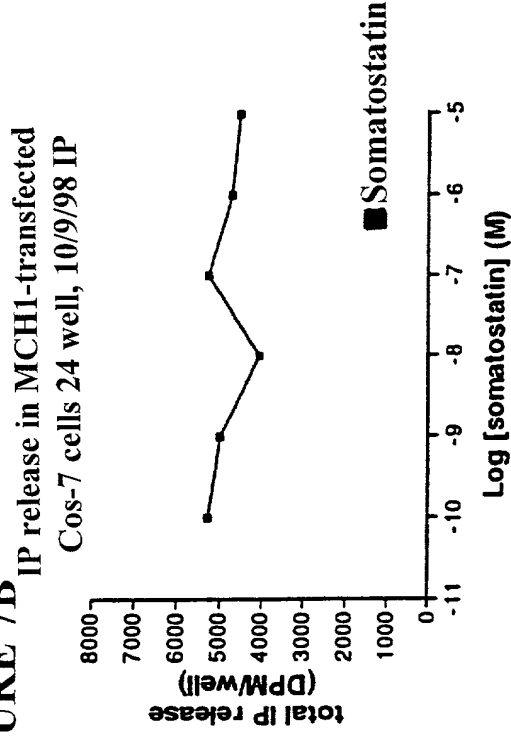


FIGURE 7C

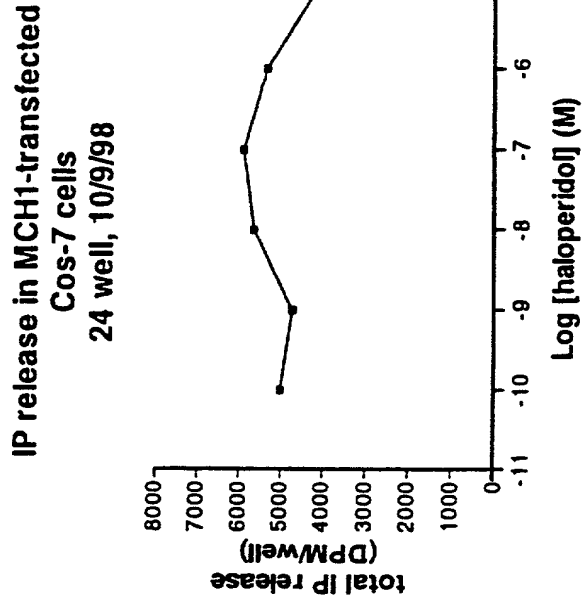
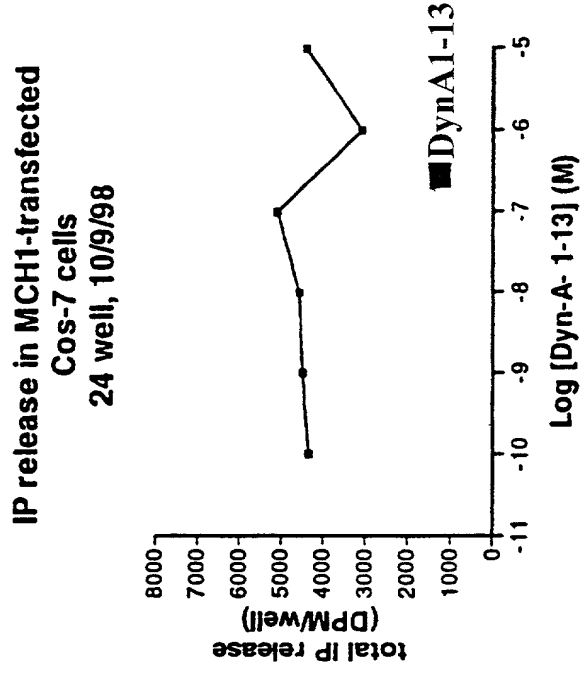


FIGURE 7D



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FIGURE 8A

Microphysiometer Response
CHO cells

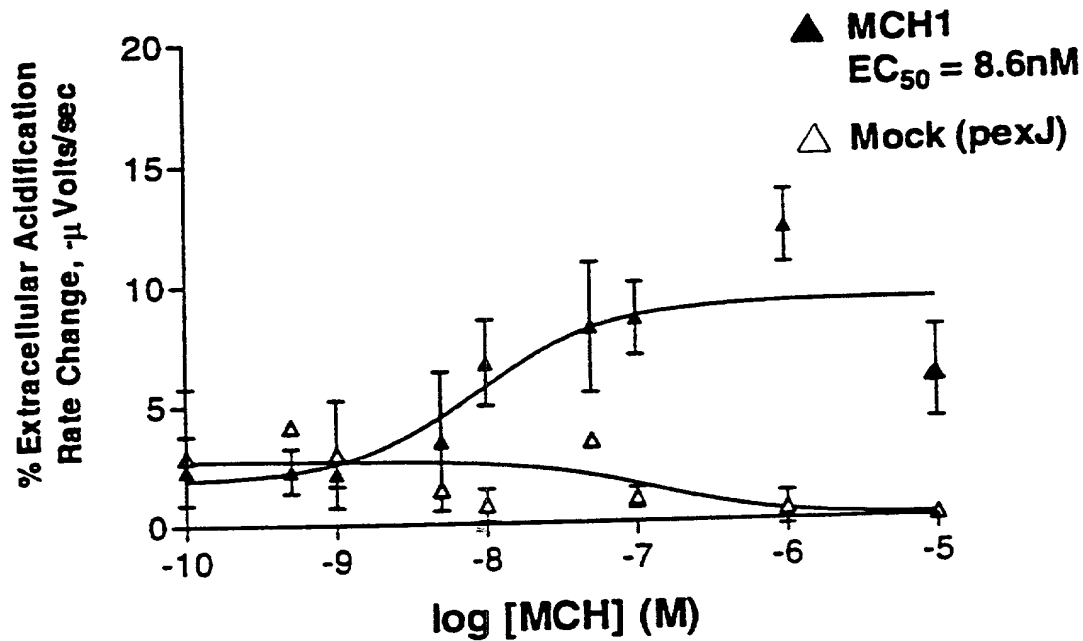


FIGURE 8B

Microphysiometer Response
CHO cells

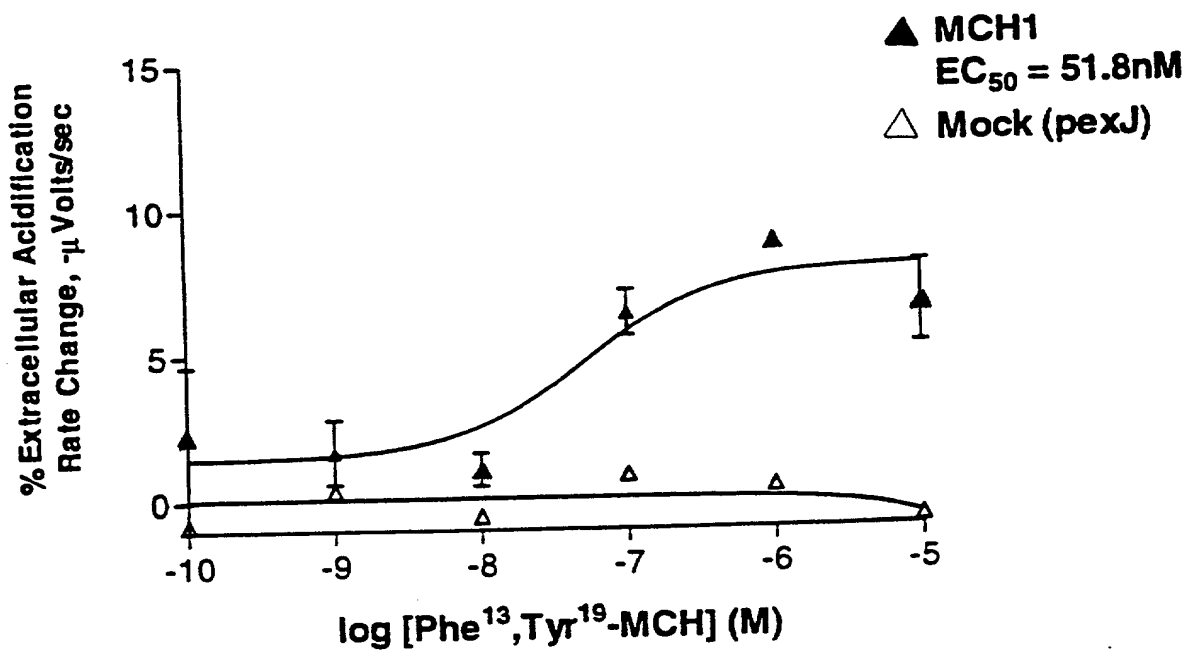


FIGURE 9

Agonist-Mediated c-fos- β -gal Activity in Cos-7 Cells

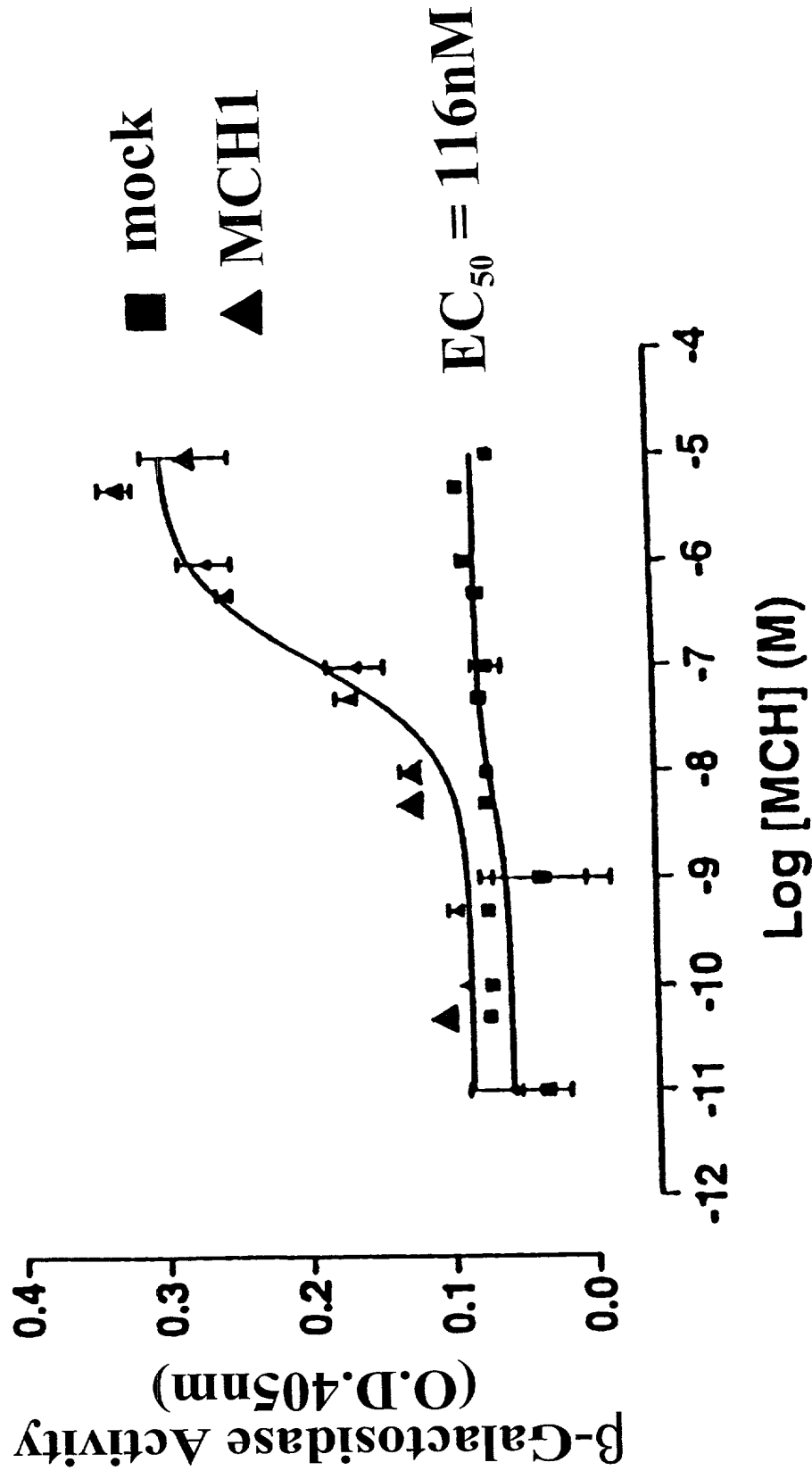


FIGURE 10A

**[125I]Phe13-Tyr19-MCH
binding on transiently
transfected Cos-7 cells**

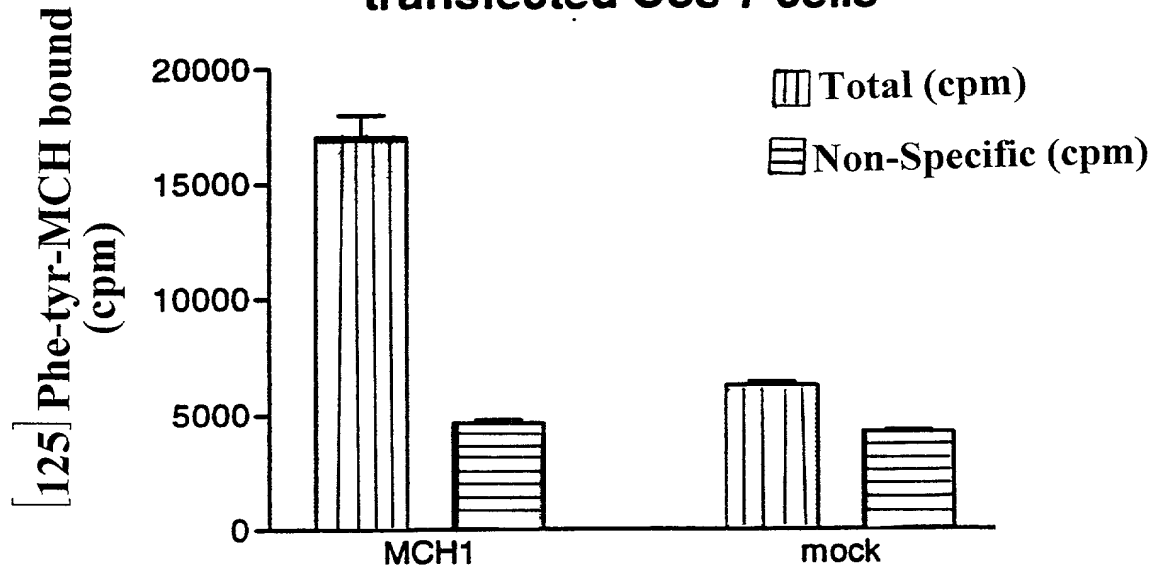
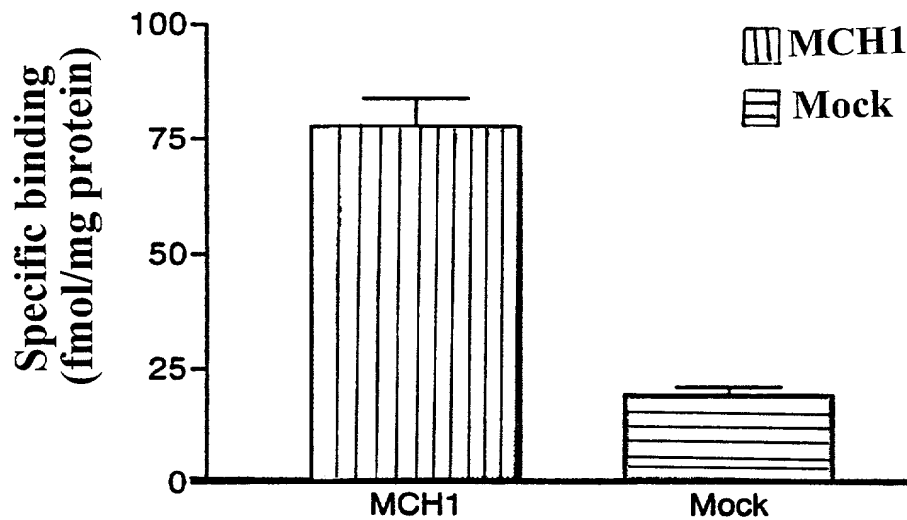


FIGURE 10B

**[125I]Phe13-Tyr19-MCH
binding on transiently
transfected Cos-7 cells**



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FIGURE 11

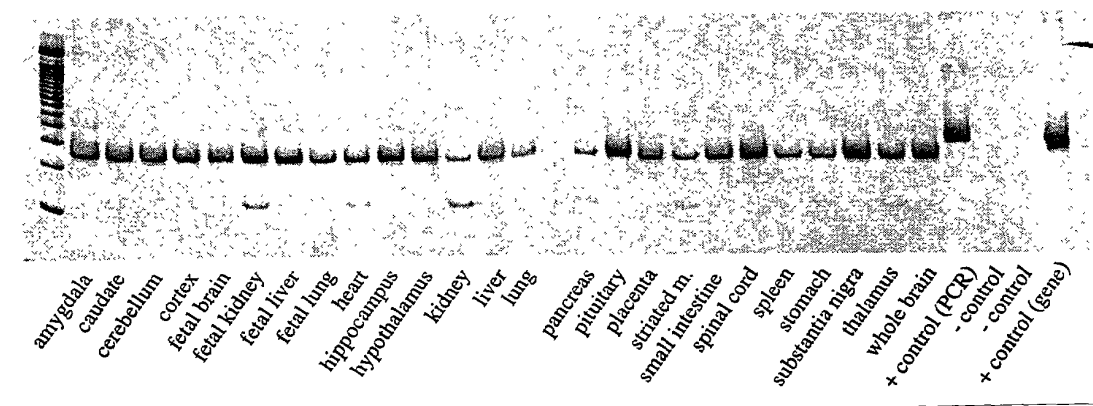


FIGURE 12

| | | | | | | |
|-------|---|------------|------------|------------|------------|----|
| TL231 | 1 | MSVGAMKKGV | GRAVGLGGGS | GCQATEEDPL | PDCGACAPGQ | 40 |
| R106 | | MSVGAMKKGV | GRAVGLGGGS | GCQATEEDPL | PDCGACAPGQ | |
| R114 | | MSVGAaKKGV | GRAVGLGGGS | GCQATEEDPL | PDCGACAPGQ | |
| BO120 | | ~~~~~ | ~~~~~ | ~~~~~ | ~~~~~ | |

| | | | | | | |
|-------|----|------------|------------|------------|------------|----|
| TL231 | 41 | GRRRWRLPQP | AWVEGSSARL | WEQATGTGWM | DLEASLLPTG | 80 |
| R106 | | GRRRWRLPQP | AWVEGSSARL | WEQATGTGwa | DLEASLLPTG | |
| R114 | | GRRRWRLPQP | AWVEGSSARL | WEQATGTGwa | DLEASLLPTG | |
| BO120 | | ~~~~~ | ~~~~~ | ~~~~~M | DLEASLLPTG | |

| | | | | |
|-------|----|------------|-----|----------------|
| TL231 | 81 | PNASNTSDGP | 100 | DNLTSAAGSPP... |
| R106 | | PNASNTSDGP | | DNLTSAAGSPP... |
| R114 | | PNASNTSDGP | | DNLTSAAGSPP... |
| BO120 | | PNASNTSDGP | | DNLTSAAGSPP... |

FIGURE 13

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | G | G | W | P | R | L | H | F | G | Y | T | F | V | Q | L | K | Y | L | I | G | G |
| 21 | S | C | G | E | N | T | L | W | L | E | I | K | I | G | F | Q | R | Y | Y | V | Q | T |
| 41 | V | Q | R | A | S | I | N | G | L | T | L | F | S | C | F | R | V | V | N | L | L | |
| 61 | A | T | W | T | N | I | N | M | C | A | K | T | I | A | T | R | Q | A | E | A | | |
| 81 | M | E | R | G | T | S | G | V | P | T | M | P | P | R | F | S | T | L | I | T | V | |
| 101 | K | E | L | T | S | Y | N | P | F | L | A | S | V | L | A | S | A | T | S | F | S | |
| 121 | K | D | P | G | D | I | S | D | M | I | I | V | W | P | L | V | I | Q | L | R | N | |
| 141 | G | P | Q | W | G | N | T | I | I | T | D | A | L | N | P | A | A | L | G | K | A | |
| 161 | V | L | P | A | D | I | I | I | Q | M | Y | L | A | D | V | A | C | I | A | L | T | |
| 181 | G | R | D | W | L | N | M | F | I | L | D | L | V | R | T | V | S | L | S | N | V | A |
| 201 | A | C | V | E | L | P | A | N | M | A | I | L | D | I | Q | V | R | S | S | L | D | |
| 221 | V | G | E | A | T | S | V | L | G | N | T | C | I | L | T | R | F | P | C | S | E | |
| 241 | G | A | G | S | S | V | V | S | N | S | V | L | P | Y | A | S | F | T | L | V | E | |
| 261 | L | C | S | L | G | K | V | V | G | Q | H | L | F | W | A | I | V | L | N | K | R | |
| 281 | G | A | S | L | G | T | S | D | W | T | I | A | G | T | V | L | W | F | F | A | E | |
| 301 | G | P | A | P | S | T | S | K | L | H | S | S | L | G | L | R | R | A | V | V | A | S |
| 321 | S | Q | L | G | P | C | L | L | F | T | S | S | S | A | Y | I | T | P | Y | Y | Q | K |

FIGURE 14

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | M | G | G | W | P | R | L | H | F | G | Y | T | F | V | Q | L | K | Y | L | I | G | G |
| 21 | S | C | G | E | N | T | L | W | L | E | I | K | I | G | F | Q | R | Y | Y | V | Q | T |
| 41 | V | Q | R | A | S | S | I | N | G | M | T | R | I | G | L | M | T | L | A | C | R | |
| 61 | G | A | R | A | S | I | I | N | M | C | A | K | T | I | A | T | R | Q | A | E | A | |
| 81 | A | T | W | T | N | I | I | N | M | C | A | P | P | R | F | S | T | L | I | T | V | |
| 101 | A | E | R | G | T | S | G | V | P | T | M | P | P | R | F | S | A | T | S | F | S | |
| 121 | K | E | L | T | S | Y | N | P | F | L | A | S | V | L | A | S | A | T | S | F | S | |
| 141 | K | D | P | G | D | I | S | D | M | I | I | V | W | P | L | V | I | Q | L | R | N | |
| 161 | G | P | Q | W | G | N | T | I | I | T | D | A | L | N | P | A | A | L | G | K | A | |
| 181 | V | L | P | A | P | I | V | F | H | A | R | T | Y | P | F | P | I | S | Y | R | Q | |
| 201 | G | P | A | D | D | I | I | I | Q | M | Y | L | A | D | V | A | C | I | A | L | T | |
| 221 | R | D | W | L | N | M | F | I | I | L | D | L | V | R | T | V | S | L | S | N | V | A |
| 241 | A | C | V | E | L | P | A | N | M | A | A | I | L | D | I | Q | V | R | S | L | D | |
| 261 | V | G | E | A | T | S | V | L | G | N | T | C | I | L | T | R | F | P | C | S | E | |
| 281 | G | A | G | S | S | V | V | S | N | S | V | L | P | Y | A | S | F | T | L | V | E | |
| 301 | L | C | S | L | A | F | K | V | G | Q | H | L | F | W | A | I | V | L | N | K | R | |
| 321 | G | A | S | L | G | G | K | V | V | F | P | W | P | F | Y | R | C | T | P | P | T | |
| 341 | G | P | A | P | S | T | S | D | W | T | I | A | G | T | V | L | W | F | F | A | E | |
| 361 | G | G | R | T | P | I | K | L | H | S | S | L | G | L | R | R | A | V | V | A | S | |
| 381 | S | Q | L | G | P | C | L | L | F | T | S | S | A | Y | I | T | P | Y | Y | Q | K | |
| 401 | | | | | | | | | | | | | | | | | | | | | | |
| 421 | | | | | | | | | | | | | | | | | | | | | | |
| 422 | | | | | | | | | | | | | | | | | | | | | | |

FIGURE 15

| | | | |
|-----|---|-----|---|
| 1 | M | 20 | G |
| 21 | P | 40 | N |
| 41 | I | 60 | T |
| 61 | V | 80 | I |
| 81 | F | 100 | I |
| 101 | H | 120 | T |
| 121 | A | 140 | D |
| 141 | R | 160 | A |
| 161 | T | 180 | L |
| 181 | Y | 200 | N |
| 201 | P | 220 | P |
| 221 | F | 240 | A |
| 241 | P | 260 | A |
| 261 | I | 280 | L |
| 281 | S | 300 | G |
| 301 | Y | 320 | K |
| 321 | R | 340 | A |
| 341 | Q | 353 | |

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